

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر ابريل



Lesson 4 Scratch

Definition:

» **Scratch Program:** It is a visual and easy-to-use educational tool for learning programming through games, animations, music, and more.



Key Points:

» Scratch Program Features:

- ① **Simple Interface:** It uses and orders visual blocks to form programs.
- ② **Educational:** It is designed to teach basic programming concepts in a fun way.
- ③ **Free:** It is available for download from its official website for free.
- ④ **Creative Thinking:** It develops skills in creative thinking and problem-solving.
- ⑤ **Problem-solving Skills:** It solves problems in a logical way.
- ⑥ **Collaboration:** It enhances teamwork skills.
- ⑦ **Foundation:** It provides a strong start for learning more complex programming languages.
- ⑧ **Sharing:** Its projects can be shared with others.

» Program Interface:

- Menu Bar
- Command Blocks Area
- Script Area: It collects programming sections.
- Stage Area: It shows project results.
- Sprite Object
- Sprites Area: It contains the project's objects.

» Coordinates:

- **Determine Coordinates:** X=..... (horizontal), Y=..... (vertical)
- **Change Coordinates:** Drag and drop the sprite to a new position.

» Implement the project:

- To execute the project, click on the icon .
- To stop the execution of the project, click on the icon .

» Saving the Project:

- File Menu: Choose "Save to your computer".
- The file extension is **Sb3**.

Lesson 5 Sprites Area in Scratch

Definition:

» **Sprites Area:** It contains the sprites used in the project.

Key Points:

» Sprites Area Features:

- 1 **Name:** It is modified by clicking and renaming.
- 2 **Location:** It determines the sprite's position (X, Y values).
- 3 **Direction:** It changes the sprite's movement direction.
- 4 **Visibility:** It shows or hides the sprite.
- 5 **Size:** It changes the sprite's size.
- 6 **Delete:** It removes the sprite.
- 7 **Add:** It is used to choose a new sprite.

» Adding a New Sprite:

- Choose Sprite: Select Basketball.
- Remove: Delete the cat sprite.

» Project 2: Moving the Ball

- **Objective:** To move the ball randomly, make a sound, repeat 10 times.

» Steps:

- 1 **Motion:** Choose "Go to random position".
- 2 **Sound:** Choose "Play sound".
- 3 **Control:** Choose the "Repeat" command.

④ **Events:** Choose the “When Clicked” command.

» Project 3: Spaceship

– **Objective:** To move a spaceship randomly, make a sound, change size, repeat 5 times, start from (0, 0).

– **Steps:**

① **Insert Sprite:** Add Rocketship.

② **Remove:** Delete the cat sprite.

③ **Background:** Choose “Space”.

» Square Drawing Project:

① **Open Project:** Start a new project.

② **Select Pen:** Drag the “pen” block to start drawing.

③ **Set Color and Size:** Use “Set Pen Color to” and “Set Pen Size to” blocks.

④ **Move the Pen:** Use “Go to x:y:” blocks to draw lines.

⑤ **Repeat the Steps:** Draw more lines to form shapes.

» Drawing a circle:

» Use the “Repeat” block to repeat the process of drawing short lines at different angles.

» Notes:

① **Drawing Shapes:** Set start and end points for lines.

② **Adding Details:** Add features like eyes, mouth, and ears.

Lesson 6 Principles of Python

Definition:

» **Python:** It is a programming language widely used in data science, machine learning, and web development.





Key Points:

» Features of Python:

- 1 **Open Source:** It is free and open for everyone to use and develop.
- 2 **Interpreted Language:** It translates codes line by line, making error detection easier.
- 3 **Versatility:** It is used in web development, data science, AI, machine learning, and game programming.
- 4 **Easy-to-Use:** It is simple and organized, with syntax similar to English.
- 5 **Integration:** It can be integrated with languages like C, C++, and Java.
- 6 **Libraries:** Numerous libraries are available for various tasks.

» Python Libraries:

- » **NumPy:** It is used in data science, statistics, and AI.
- » **Pandas:** It is used for data analysis and processing.
- » **Matplotlib:** It is used for creating graphs and charts.

» How to Download Python:

- 1 **Visit:** Go to the official Python website www.python.org.
- 2 **Choose Download:** Select the download option.
- 3 **Select System:** Choose your operating system (Windows, Mac, or Linux).
- 4 **Choose Bit Version:** Select 64-bit or 32-bit based on your device specifications.
- 5 **Install:** Download and install the program, following the instructions.

Lesson 7 Variables in Python

Definition:

- » **Variables:** They are reserved places in memory to store values that can change during program execution.

Key Points:**» Conditions for Naming Variables in Python:**

- ❶ Start with a letter or underscore (_).
- ❷ Contain letters (A-Z), numbers, or underscore (_).
- ❸ Avoid reserved words.

» Types of Variables in Python:

- ❶ **Numbers:** To store numerical values.
 - **Integer Variables (int):** $X = 5, Y = 10$
 - **Decimal Variables (float):** $Z = 5.25, A = 8.32$
- ❷ **Strings:** To store texts, enclosed in single or double quotes.
 - **Examples:** `Name = "Taher", City = 'Cairo'`
- ❸ **Booleans:** They contain only two values, True or False.
 - **Examples:** `Is_taher_student = False, Is_taher_a_teacher = True`

» Python Program Interface:

- ❶ **Interactive Python Interface (Python Shell):** It is used to write and execute simple codes directly.
 - It is automatically installed when you install the language.
- ❷ **Text Editor:** It is used to write longer, complex codes and save them for later execution.

**» Using the type () Function:**

- **Purpose:** To determine the type of a variable.

» Simple Python Code Using Variables:

- **Print Function:** It displays text, variables, or results of mathematical operations on the output screen.

Model Exam

1

1 Choose the correct answer:

- 1 The Sprites Area in Scratch contains
a. backgrounds b. sprites c. sounds d. blocks
- 2 The X and Y values in Scratch represent the
a. size of the sprite b. direction of the sprite
c. location of the sprite d. color of the sprite
- 3 Scratch allows students to learn principles.
a. drawing b. music c. programming d. all of them
- 4 Scratch can be used to create
a. games b. animations c. simulations d. all of them
- 5 The text value of the variable is placed between the signs
a. " " b. < > c. > = d. = <
- 6 To display texts, variables, or even the results of mathematical operations, we use the function
a. Cos() b. Type() c. Print() d. Sin()
- 7 In Scratch, to add sound effects to the sprite, we use the command
a. Repeat b. Looks
c. Play Sound d. Choose a Backdrop
- 8 The file extension for a Scratch project is
a. Docx b. Sb3 c. Bmp d. Jpg

2 Put (✓) or (X):

- 1 In the Scratch program, we use the coordinates (x, Y) to determine the location of a sprite on the stage. ()

- 2 Python is one of the most difficult programming languages. ()
- 3 In Scratch, the name of the sprite can be changed multiple times. ()
- 4 Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming. ()
- 5 The Scratch program is paid. ()
- 6 Python can be integrated with other languages, such as C, C ++, and Java. ()
- 7 The texts of variables in Python are placed between single quotation marks ' ' or double quotation marks " ". ()

Model Exam

2

1 Choose the correct answer: سلسلة كثر

- 1 To add a new sprite, click on
 - a. Choose Sprite
 - b. Delete Sprite
 - c. Rename Sprite
 - d. Move Sprite
- 2 The "Go to random position" command is found in the group.
 - a. Motion
 - b. Sound
 - c. Control
 - d. Events
- 3 The "Pen" extension is added by clicking on
 - a. Choose Sprite
 - b. Add Extension
 - c. Delete Sprite
 - d. Change Backdrop
- 4 Scratch is a fun and educational tool.
 - a. difficult-to-use
 - b. easy-to-use
 - c. text-based
 - d. none of them
- 5 Scratch helps enhance skills.
 - a. problem-solving
 - b. collaboration
 - c. creative thinking
 - d. all of them
- 6 To know the type of variable statement in Python, we use the function
 - a. Cos()
 - b. Type()
 - c. Print()
 - d. Sin()

- 7 The Scratch program interface areas are like
 a. command blocks b. stages c. both a & b d. none of them
- 8 To modify (rename) the sprite name, click on
 a. Sprite and rename it b. Sprite and delete it
 c. Sprite and add it d. Sprite and change its color

2 Put (✓) or (X):

- 1 Is_taher_student = False: The statement type of the variable Is_taher_student is logical (Boolean). ()
- 2 To know the type of the variable, we do not need to use the type() function. ()
- 3 In Scratch, the horizontal and vertical axes are used to determine the current position of the sprite on the stage. ()
- 4 In the Scratch program, students face difficulty in sharing projects with others. ()
- 5 The direction of the object's movement in Scratch can be changed by pressing the word Direction. ()
- 6 To modify the object's name in Scratch, press its current name and rename it. ()
- 7 Only one object can be added to the stage in Scratch. ()

Model Exam

3

1 Choose the correct answer:

- 1 To make the ball move randomly, use the command.
 a. Go to random position b. Move 10 steps
 c. Turn 15 degrees d. none of them
- 2 To draw a geometric shape, you need to set the points of the lines.
 a. random b. middle c. start and end d. none of them

- 3 The "Repeat" command is used to
 - a. delete a sprite
 - b. execute actions multiple times
 - c. change the backdrop
 - d. play a sound
- 4 To execute the project, click on the icon.
 - a. green flag
 - b. red stop sign
 - c. blue arrow
 - d. none of them
- 5 To save your Scratch project, select the File menu, then select
 - a. Save to your computer
 - b. Sprites
 - c. Creative thinking
 - d. Learn principles of programming
- 6 If the movement is too fast, the command from Control Blocks is used.
 - a. Wait
 - b. Repeat
 - c. Forever
 - d. Else
- 7 The function is used to display texts or values on the output screen.
 - a. Cos()
 - b. Type()
 - c. Print()
 - d. Sin()
- 8 A new background for the project is inserted by pressing
 - a. Script Area
 - b. Stage
 - c. Choose Sprite
 - d. Choose a Backdrop

2 Put (✓) or (X):

- 1 When naming variables, reserved words in the Python language may be used. ()
- 2 $Y = 10$: The statement type of the variable Y is numeric for an integer. ()
- 3 `City = "Cairo"`: The statement type of the variable City is text. ()
- 4 Scratch is used in teaching advanced programming. ()
- 5 In Scratch, a code segment is a combination of commands arranged in a specific order. ()
- 6 A Scratch project can be saved from the File menu by selecting 'Save to your computer.' ()
- 7 The sprites used in the project appear in the Sprites Area. ()

Model Exam

4

1 Choose the correct answer:

- 1 To stop the execution of the project, click on the icon.
 - a. green flag
 - b. red stop
 - c. paintbrush
 - d. Scratch logo
- 2 To execute the project's steps, use the command
 - a. Change x by 10
 - b. Move 10 steps
 - c. Wait 1 seconds
 - d. When green flag clicked
- 3 To move the pen to a specific point, use the block.
 - a. Go to x: y:
 - b. Move 10 steps
 - c. Turn 15 degrees
 - d. none of them
- 4 Scratch areas are blocks, script, stage, and
 - a. save to your computer
 - b. sprites
 - c. creative thinking
 - d. learn principles of programming
- 5 Scratch program helps students to learn principles of programming and
 - a. save to your computer
 - b. sprites
 - c. creative thinking
 - d. simple interface
- 6 To save a project, choose "Save to your computer" from the menu.
 - a. File
 - b. Edit
 - c. View
 - d. Help
- 7 Decimal variables in Python are stored as data types.
 - a. string
 - b. int
 - c. float
 - d. Boolean
- 8 The "When Clicked" command is found in the group.
 - a. Sound
 - b. Motion
 - c. Control
 - d. Events

2 Put (✓) or (X):

- 1 The sprite cannot be deleted from the stage in Scratch. ()

- 2 Scratch helps the students to learn the basics of programming in an interesting and exciting way. ()
- 3 To display Hello on the stage, select the command Say Hello from the control Blocks. ()
- 4 Scratch program can be download from its official website. ()
- 5 TAHER, Taher, tahir, TaheR are 4 names for variables in the Python language. ()
- 6 The variable name contains letters (A-Z), numbers, or an underscore sign _ . ()
- 7 Python is an interpreted language because it translates programming codes line by line. ()

Model Exam

5

1 Choose the correct answer:

- 1 The "Pen" extension is used to
 - a. move sprites
 - b. draw shapes and lines
 - c. play sounds
 - d. change the background
- 2 The "Set Pen Color to" block is used to
 - a. change the pen size
 - b. change the pen color
 - c. move the pen
 - d. delete the pen
- 3 When you make a Scratch project, to move the sprite, use the command group.
 - a. Looks
 - b. Motion
 - c. Events
 - d. Control
- 4 To make the sprite move 30 steps, change the value in the "Move" block to
 - a. 10
 - b. 30
 - c. 60
 - d. 100
- 5 To make the ball move randomly, use the command.
 - a. Go to random position
 - b. Move 10 steps
 - c. Turn 15 degrees
 - d. none of them

- 2** Put (✓) or (x):

- 1 In the Wait command, the wait value of 1 represents 1 second. ()
- 2 We use click and drag-and-drop to interact with any command inside the code segment. ()
- 3 It is not permissible to create applications and websites in Python.()
- 4 Python is used in developing data science and machine learning.()
- 5 The variable name must not begin with a letter or an underscore sign _.()
- 6 The Scratch program offers a wide range of ideas that can be programmed. ()
- 7 In the Scratch program, the result of the work or project appears in the Blocks area. ()



Answers

Model Exam 1

1	1 b	2 c	3 c	4 d
	5 a	6 c	7 c	8 b
2	1 ✓	2 ✗	3 ✓	4 ✓
	5 ✗	6 ✓	7 ✓	

Model Exam 2

1	1 a	2 a	3 b	4 b
	5 d	6 b	7 c	8 a
2	1 ✓	2 ✗	3 ✓	4 ✗
	5 ✓	6 ✓	7 ✗	

Model Exam 3

1	1 a	2 c	3 b	4 a
	5 a	6 a	7 c	8 d
2	1 ✗	2 ✓	3 ✓	4 ✗
	5 ✓	6 ✓	7 ✓	

Model Exam 4

1	1 b	2 d	3 a	4 b
	5 c	6 a	7 c	8 d
2	1 ✗	2 ✓	3 ✗	4 ✓
	5 ✓	6 ✓	7 ✓	

Model Exam 5

1	1 b	2 b	3 b	4 b
	5 a	6 c	7 a	8 b
2	1 ✓	2 ✓	3 ✗	4 ✓
	5 ✗	6 ✓	7 ✗	

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

اختبار شهر ابريل



General Exercises

On Lesson Five



يمكنك حل التدريب
والتصويب إلكترونياً



► If you got ● you need to revise the lesson again.

قم بتقييم نفسك بالعلامات الموضحة وإذا حصلت على ● (غير جيد) قم بمراجعة الدرس مرة أخرى من الصفحة السابقة.

ممتاز ● جيد جداً ● جيد ● غير جيد ●

El-Moasser Exercises

1 Choose the correct answer from a, b, c or d.

- The location of the sprite in Scratch on the platform can be determined by
 - X and Y axes
 - changing of direction
 - name change
 - using the Play sound brick
- is an option that allows adding a new sprite in the sprites area.
 - Delete the object
 - Choose Sprite
 - Change Size
 - Play sound
- In the "Moving the Ball" project, choose from Motion to make the ball move randomly.
 - when  clicked
 - Play sound
 - Repeat
 - Go to random position
- is the option required to activate the pen tool.
 - Choose Sprite
 - Add Extension
 - Go to random position
 - Change Size
- A circle can be drawn in Scratch by
 - Moving the pen in a straight line
 - Repeating short lines at different angles
 - Using the Play sound command
 - Changing the name of the sprite

2 Complete the following sentences with the appropriate words in brackets.

(sprites area - Direction - Repeat - Pen blocks - Go to random position)

- an area in the Scratch program that contains the sprites used in the project and is used to modify their properties.
- is a command used to move the sprite to a random location on the platform.
- is a tool from Add Extension that is used to draw geometric shapes.
- A block used to repeat a set of commands a specified number of times.
- is a property that determines the direction in which the object moves on the stage.

3 Put (✓) in front of the correct sentence and (x) in front of the wrong one.

1. The default location of the sprite on the platform is (100, 80). ()
2. The name of the object in the sprite area can be modified by clicking on it and renaming it. ()
3. The "Go to random position" block is used to move the sprite to a random location. ()
4. A new background can be added to the project via the Choose Sprite option. ()
5. The Pen tool is used to draw geometric shapes in Scratch. ()
6. A Sprite can be resized in the Sprites area. ()
7. The "Play sound" block is used to hide the sprite from the stage. ()

Student's Book Exercises

• Put (✓) in front of the correct sentence and (x) in front of the wrong one.

1. The sprites used in the project appear in the Sprites area. ()
2. The sprite name can be modified only once. ()
3. The location of the sprite on the platform is determined by the value of the horizontal axis X only. ()
4. The horizontal and vertical axis are used to know the current location of the sprite on the platform. ()
5. To modify the name of the sprite, click on its current name and rename it. ()
6. The direction of the sprite's movement can be changed by clicking on the word Direction. ()
7. The sprite can be shown or hidden on the platform by clicking on Choose Sprite. ()
8. The size of the sprite is changed by its value in the Sprites area. ()
9. The sprite can be deleted from the platform. ()
10. Only one sprite can be added to the platform. ()
11. To add a new sprite, click on Choose Sprite. ()
12. The Stop command is used to watch the project execution. ()
13. A new background is inserted for the project through the programming area. ()
14. The Start command is used to stop the project. ()
15. We use the coordinates (x, y) to locate the point on the stage. ()

قم بتلوين الدائرة باللون المناسب لمستواك.



On Lesson Six



بممكنك حل التدريب
وتصويبه إلكترونيا



► If you got you need to revise the lesson again.

● ممتاز ● جيد جداً ● جيد ● غير جيد

قم بتقييم نفسك بالعلامات الموضحة وإذا حصلت على (غير جيد) قم بمراجعة الدرس مرة أخرى من الصفحة السابقة.

El-Moasser Exercises

1 Choose the correct answer from a, b, c or d.

- One of the advantages of the Python language is that it is
 - easy to use
 - hard language
 - closed-source language
 - all of the above
- Python can be integrated with other languages such as
 - Java
 - C++
 - both (a) and (b)
 - HTML
- Python increase the efficiency and effectiveness of programming using Python.
 - graphs
 - charts
 - games
 - libraries
- is a library for analyzing and processing data.
 - Pandas
 - NumPy
 - Matplotlib
 - Mac
- Python is a/an language as it translates programming codes line by line.
 - complex
 - interpreted
 - medical
 - industrial

2 Complete the following sentences with the appropriate words in brackets.

(Programming - charts – robots – Versatility)

1. is one of the features of Python.
2. Python is one of the easiest languages.
3. Matplotlib is a library for creating graphs and

3 Put (✓) in front of the correct sentence and (x) in front of the wrong one.

1. Thanks to Python libraries, programmers don't have to write codes for many tasks.
2. Python is suitable for beginners because of its simple and tidy formula.

3. Python libraries provide ready-made solutions to many problems. ()
4. Pandas library is heavily used in data science, statistics and artificial intelligence. ()
5. There is no library for data analysis and processing in Python. ()

Student's Book Exercises

1 Put (✓) in front of the correct sentence and (x) in front of the wrong one.

1. Python is a free and open-source language, which does not allow anyone to develop it. ()
2. It is not permissible to create applications and websites in Python. ()
3. Python uses data science and machine learning. ()
4. Python is an interpreted language because it translates programming codes line by line. ()
5. Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming. ()
6. Python is one of the most difficult programming languages. ()
7. Python can be integrated with other languages such as C, C++, and Java. ()
8. One of the disadvantages of Python is the lack of libraries that you can use. ()
9. NumPy: is a library used in data science, statistics, and artificial intelligence. ()
10. Pandas: is a library for analyzing and processing data. ()

2 Download Python from the official website and arrange the following steps in the correct order.

1. You must choose 64bit or 32bit, depending on your device specifications. (.....)
2. Visit the official Python website www.python.org. (.....)
3. Choose the system you are working on (Windows, Mac, or Linux). (.....)
4. After downloading, install the program on your device and follow the instructions. (.....)
5. Choose "Downloads". (.....)

قم بتلوين الدائرة باللون المناسب لمستواك.



General Exercises

On Lesson Seven



يمكنك حل التدريب
وتصويبه إلكترونياً



► If you got ● you need to revise the lesson again.

قم بتقييم نفسك بالعلامات الموضحة وإذا حصلت على ● (غير جيد) قم بمراجعة الدرس مرة أخرى من الصفحة السابقة.

ممتاز ● جيد جداً ● جيد ● غير جيد

El-Moasser Exercises

1 Choose the correct answer from a, b, c or d.

- Textual variables can store
a. strings
b. boolean
c. numbers
d. none of the above
- function is used to display text or values on the output screen.
a. Type ()
b. print ()
c. Input ()
d. output ()
- Through..... the codes are written, saved and later executed.
a. browser
b. text editor
c. photoshop
d. paint
- The function "....." is used to know the variable type.
a. type ()
b. print ()
c. input ()
d. output ()

2 Complete the following sentences with the appropriate words in brackets.

(interactive Python interface – underscore – strings – Booleans)

- are a type of variable that takes values true or false.
- The is installed when Python is installed.
- The variable name begins with a letter or an

3 Put (✓) in front of the correct sentence and (x) in front of the wrong one.

- A variable is an unreserved place to store fixed values that cannot be changed. ()
- When naming a variable you must start with a number. ()
- Variable values can be changed by code. ()
- Reserved words may be used in Python because they express certain values that the program understands. ()
- Boolean values take values (3 – 4 – 5). ()
- The use of uppercase and lowercase letters can be ignored when naming a variable. ()

Student's Book Exercises

1 Put (✓) in front of the correct sentence and (x) in front of the wrong one.

1. Variables in programming languages are a reserved place in memory to store and save a specific value. ()
2. The variable name must not begin with a letter or an underscore sign _. ()
3. TAHER, Taher, taheR, TaheR are 4 names for variables in the Python language. ()
4. The change name contains letters (A-Z) , numbers or an underscore sign _. ()
5. When naming variables, reserved words in the Python language may be used. ()
6. Y= 10 The statement type of the variable Y is numeric for an integer. ()
7. City = "Cairo" The statement type of the variable City is text. ()
8. Is_taher_student = False The statement type of the variable Is_taher_student is logical. ()
9. To know the type of the variable, we do not need to use the type () function. ()
10. The texts of variables are placed between single quotation marks ' ' or double quotation marks " ". ()

2 Choose the correct answer from a, b, c or d.

1. The function is used to display texts or values on the output screen
a. Cos() b. Type() c. Print() d. Sin()
2. The text value of the variable is placed between the signs
a. "" b. <> c. >= d. =<
3. To display texts, variables, or even the results of mathematical operations, we use the function
a. Cos() b. Type() c. Print() d. Sin()
4. To know the type of variable statement, we use the function
a. Cos() b. Type() c. Print() d. Sin()

قم بتلوين الدائرة باللون المناسب لمستواك.



حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

اختبار شهر ابريل



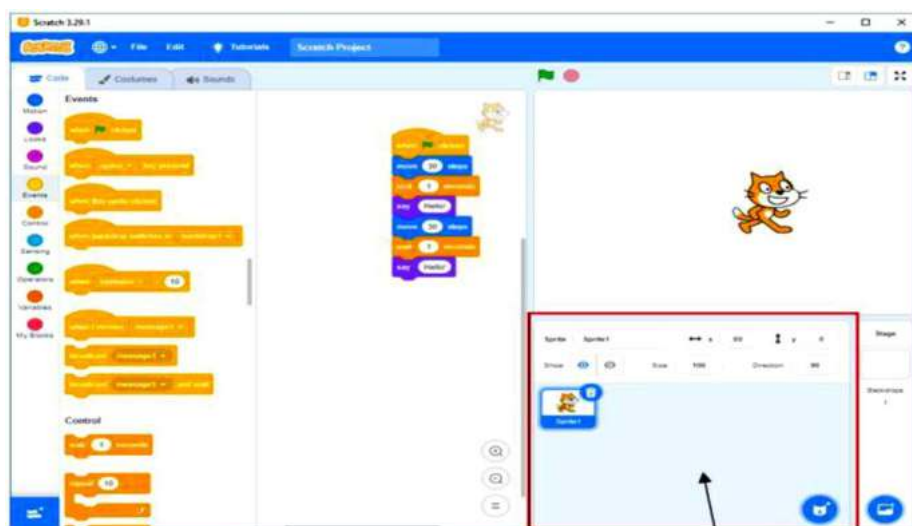
Lesson 5 Sprites Area in Scratch

Engage:

How can you set up a simple project on Scratch?

Learn

Sprites area (contains the sprites used in the project), sprites used in the project appear as follows:



1-The name of the sprite (you can modify it by clicking on it and renaming it).
 2-The location of the sprite and determines it (the horizontal axis is the X values and the vertical axis is the Y values, note the current location of the sprite (cat) on the platform is ((60,0)

3-The direction of the sprite's movement:

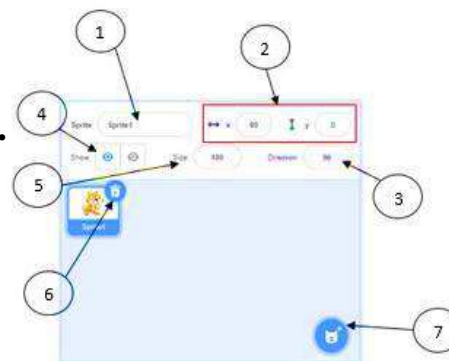
(You can change the direction by changing the Direction value).

4-Show or hide the sprite on the platform.

5-The size of the sprite and its value can be changed.

6-Delete the sprite from the platform.

7-Add a new sprite Choose Sprite.



Activity:

With the help of your teacher, make the following changes to the Sprite:

- 1-The name of the sprite (you can modify it).
- 2-The location of the sprite on the platform is (100,80)
- 3-The direction of the sprite's movement.
- 4-Show or hide the sprite from the platform.
- 5-The size of the sprite to the value 50.
- 6-Delete the sprite from the platform.
- 7-Add a new sprite.

Add a new sprite:

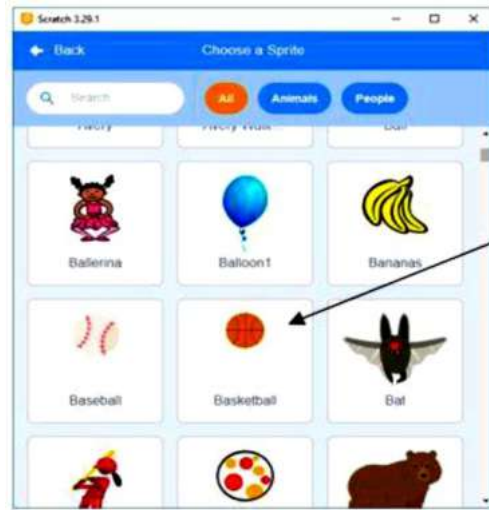
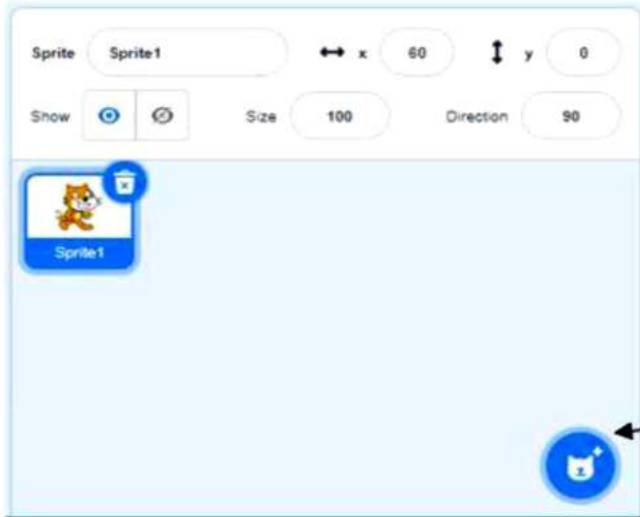
To add a new sprite in the sprites area

-Click on Choose Sprite



Select Basketball

-Remove the cat sprite from the stage



Project 2:

Required to move the ball randomly on the platform while making a sound for the ball and repeating this 10 times

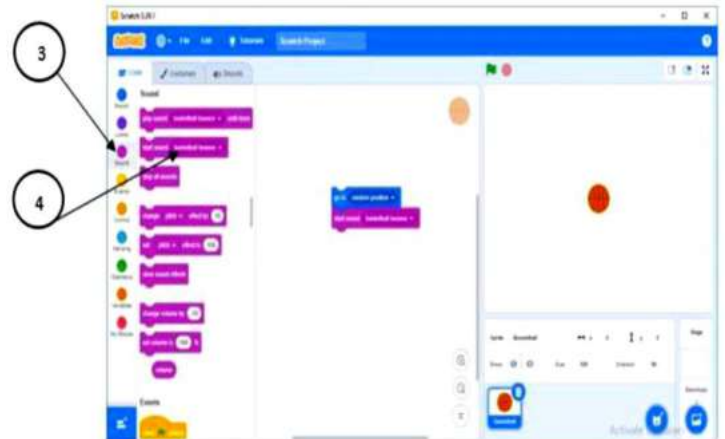
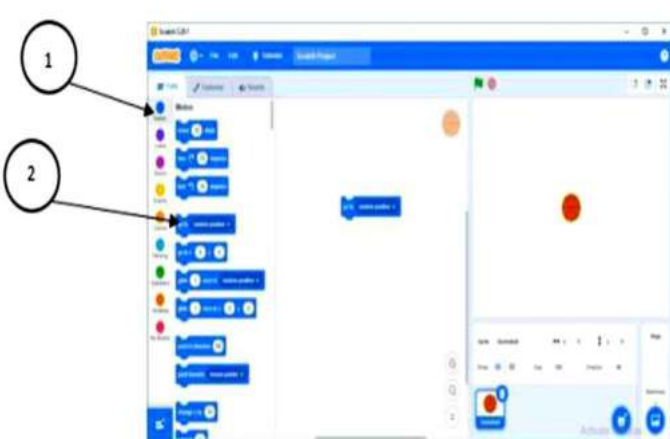
Project creation steps:

1-From Motion

2-Choose the Go to random position command

3-From Sound

4-Choose the command Play sound



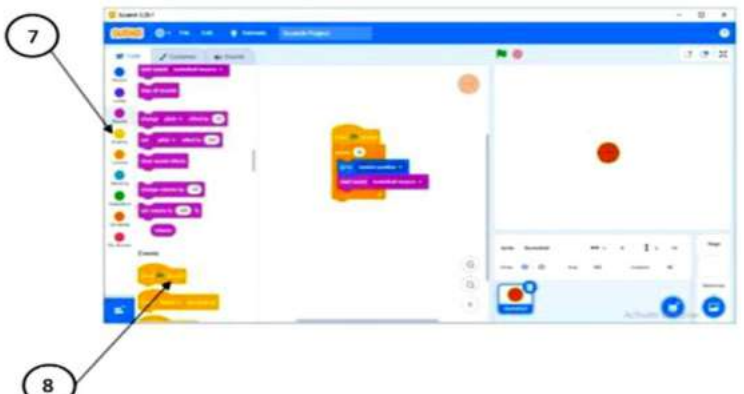
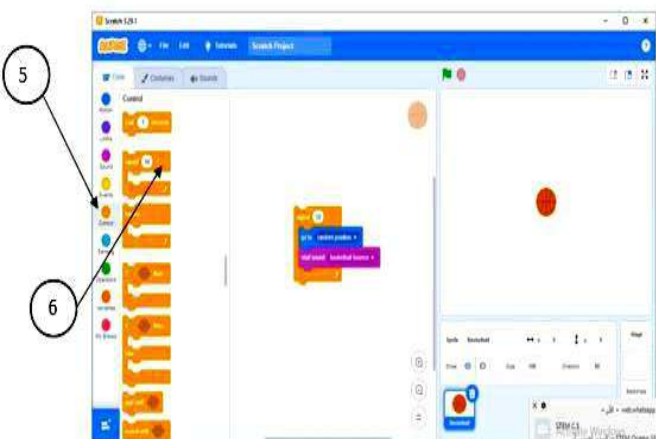
5-To repeat the movement 10 times from Control

To execute the project

7-From Events

8-Choose the When Clicked command

Test the execution of the project



Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1- The file extension for Scratch project is

A- Docx B- Sb3 C- bmp D- Jpg

2. To execute the project's steps, use the command embedded at the beginning of the code segment.

A- 

B- 

C- 

D - 

Weekly evaluation: AFor the first test

Put the (✓) correct statement or the (x) incorrect statement.

1. In the Scratch program, a code segment is a combination of commands arranged in a specific order. ()

2. Before executing any project, the coordinates of the object on the stage are X=10 and Y=10. ()

Weekly evaluation: AFor the second test

Put the (✓) correct statement or the (x) incorrect statement.

1 In the Wait command, the wait value of 1 represents (1 second). ()

2. The object's position on the stage is determined by the value of the horizontal axis X and the vertical axis Y. ()

Weekly evaluation: AFor the third test

Put the (✓) correct statement or the (x) incorrect statement.

1 We use click and drag-and-drop to interact with any command (inside) the code segment. ()

2. To make the movement continuous, you can assemble the command several times. ()

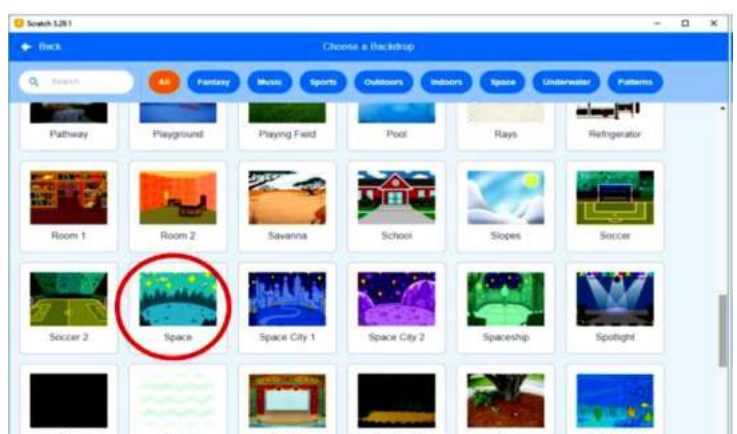
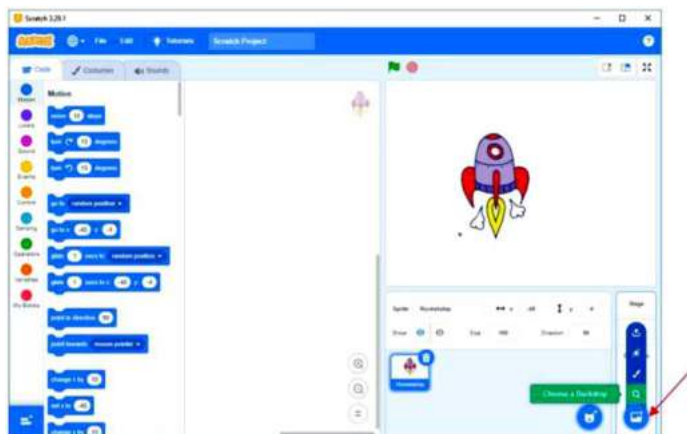
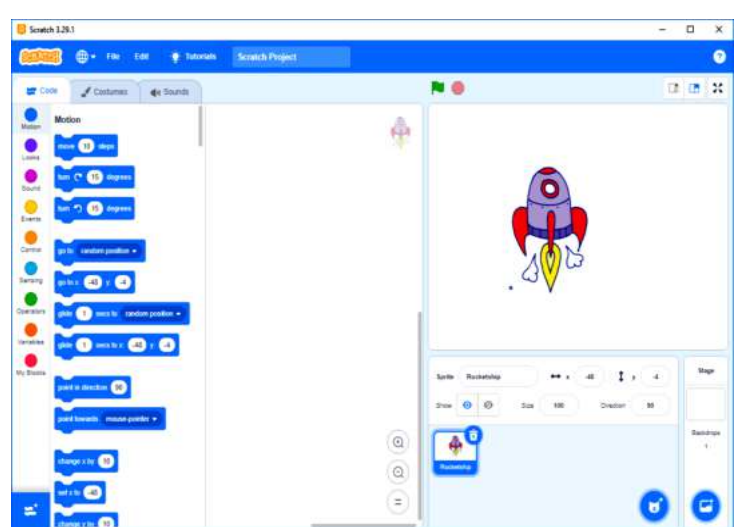
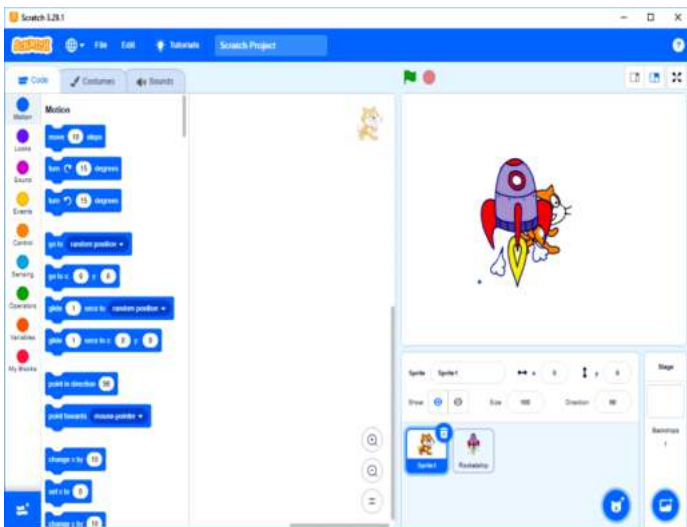
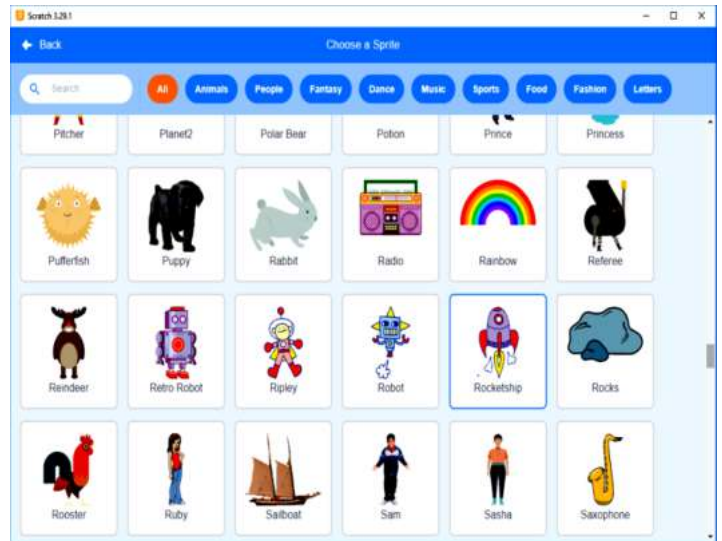
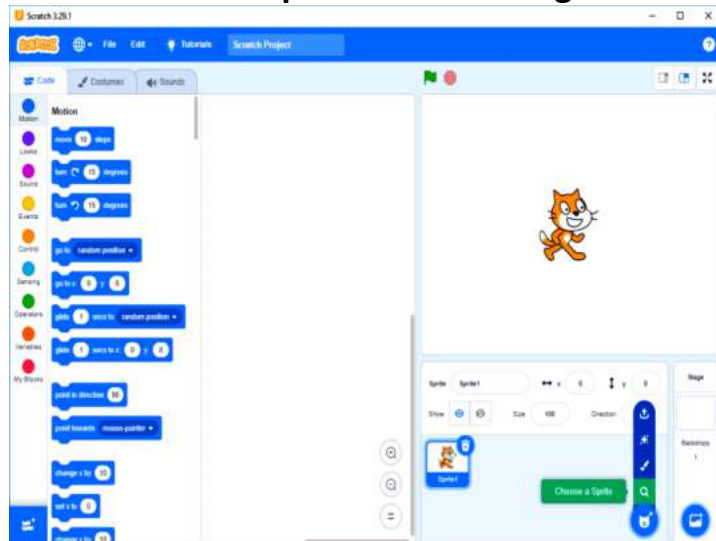
The date/...../..... The day :

The date/...../..... The day :

Lesson 5 Sprites Area in Scratch

Project (3) Spaceship

- Insert a new sprite Rocketship
- Remove the cat sprite from the stage.



- Insert a new background by clicking on Choose a Backdrop, browse through the different backgrounds and then choose "Space".**

**With the help of your teacher and in cooperation with your colleagues, do the following:
Make the spaceship move randomly, make a sound for the spaceship, change the size of the
spaceship, repeat this 5 times, make the spaceship's location on the platform start from (0, 0)**



With the help of your teacher and in cooperation with your classmates, do the following:

1. Open a new project: Open Scratch and start a new project.



Note: Click on Add Extension and the pen

Pen

- erase all
- stamp
- pen down
- pen up
- set pen color to red
- change pen color by 10
- set pen color to 50
- change pen size by 1
- set pen size to 1

4. Moving the Pen: Now, we will move the pen to draw the shape we want. Use the “Go to x:y:” block to set the starting point, and then use the “Go to x:y:” block again to set the ending point. This will make the pen draw a straight line between the two points.

5. Repeating Steps: Repeat the previous steps to draw more lines and form the shape you want.

— **Drawing different shapes**: You can draw any geometric shape by setting the start and end points of the lines appropriately.

Adding details:

You can add details to your image such as eyes, mouth, and ears.

when clicked

pen down

set pen color to magenta

set pen size to 5

go to x: 0 y: 0

go to x: 111 y: 111

To draw a circle, you can use the "Repeat" block to repeat the process of drawing short lines at different angles, this helps with the circle drawing effect.

Learn by doing

Put a check mark (✓) in front of the correct sentence and a check mark (✗) in front of the incorrect sentence.

- 1- The sprites used in the project appear in the Sprites area ()
- 2- The sprite name can be modified only once. ()
- 3- The location of the sprite on the platform is determined by the value of the horizontal axis X only. ()
- 4- The horizontal and vertical axis are used to know the current location of the sprite on the platform. ()
- 5- To modify the name of the sprite, click on its current name and rename it. ()
- 6- The direction of the sprite's movement can be changed by clicking on the word Direction. ()
- 7- The sprite can be shown or hidden on the platform by clicking on Choose Sprite. ()
- 8- The size of the sprite is changed by its value in the Sprites area ()
- 9- The sprite can be deleted from the platform ()
- 10- Only one sprite can be added to the platform. ()
- 11- To add a new sprite, click on Choose Sprite. ()
- 12- The Stop command is used to watch the project execution ()
- 13- A new background is inserted for the project through the programming area. ()
- 14- The Start command is used to stop the project. ()
- 15- We use the coordinates (x, y) to locate the point on the stage. ()

Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1 In Scratch, to repeat the sprite's movement, we use the

A- Start

B- Choose Sprite

C- Command Blocks Area

D- Stop

2. In Scratch program, to add sound effect to the sprite, use the command

A- Repeate

B- Looks

C- Play sound

D- Choose a Backdrop

Weekly evaluation: AFor the first test

Put the (√) correct statement or the (x) incorrect statement.

1 In Scratch, we use the coordinates (x, y) to determine the location of a point on the stage. ()

2. To modify the name of the sprite, click on its current name and rename it. ()

Weekly evaluation: AFor the second test

Put the (√) correct statement or the (x) incorrect statement.

1 In Scratch, the name of the sprite can be changed multiple times. ()

2. The sprite cannot be deleted from the stage. ()

Weekly evaluation: AFor the third test

Put the (√) correct statement or the (x) incorrect statement.

1 In Scratch, the horizontal and vertical axes are used to determine the current position of the sprite on the stage. ()

2. The sprites used in the project appear in the Sprites area. ()

Lesson 6 Principles of Python

Engage:

What is Python programming language? How can the application be downloaded from the official website?

Learn What is Python:

Before we start defining Python, we must know that the first version of the language was in 1991. It is a programming language widely used in data science and machine learning, and for developing websites and applications.

Features of Python:

- 1.Open source:** Python is free and open source, allowing everyone to use and develop it.
- 2.Interpreted language:** Which means that it translates programming codes line by line, so if there are errors in the program code, it will stop working, as programmers can quickly find errors in the codes.
- 3.Versatility:** It can be used in developing web applications, data science, artificial intelligence, machine learning, and game programming.
- 4.Easy-to-use language:** It is one of the easiest programming languages for beginners because of its simple and organized formula and uses words similar to English, unlike other programming languages.
- 5.Integration:** Python can be integrated with other languages such as C, C++, and Java, and it can also be used in developing multi-platform programs.
- 6.Libraries:** Python has many libraries that you can use.

Python Libraries

They are pre-built codes and functions that help programmers perform specific tasks without having to write codes from scratch, libraries are a powerful tool that increases the efficiency and effectiveness of programming using Python, as they provide ready-made solutions to many common problems or requirements.

like:

NumPy: is a library widely used in data science, statistics, and artificial intelligence.

Pandas: is a library for analyzing and processing data.

Matplotlib: is a library for creating graphs and charts

Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1- One of the advantages of Python is that it

B- Closed source

D- Limited use

2- Python translates code line by line, which means it language.

A- A complex. B- interpreted C- Closed source. D- Not integrated.

Weekly evaluation: A

Put the (✓) correct statement or the (x) incorrect statement.

1 Python is considered one of the most difficult programming languages. ()

2. Python is used in data science and machine learning. ()

Weekly evaluation: AFor the second test

Put the (✓) correct statement or the (x) incorrect statement.

1 Python is considered an interpreted language because it translates code line by line. ()

2. It is not possible to create applications and websites using Python ()

Weekly evaluation: AFor the third test

Put the (✓) correct statement or the (x) incorrect statement.

1 Python is considered a free and open-source language, which does not allow anyone to develop it. ()

2. Python is used in web application development, data science, artificial intelligence, machine learning, and game programming. ()

The date/...../.....

The day :.....

Lesson 6 Principles of Python

How to download the program from the official website:

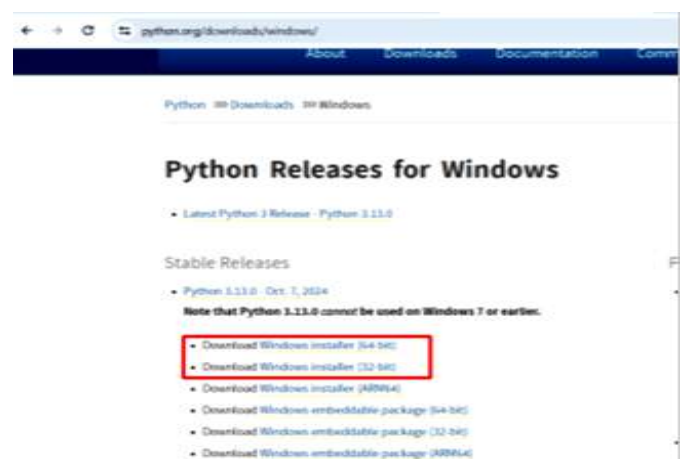
1-Visit the official Python website www.python.org



2-Choose “Download”

3-Then choose the system you are working on (Windows, Mac, or Linux).

4-You must choose 64 bit or 32 bit, according to your device specifications.



5-After downloading, install the program on your device and follow the instructions.



Learn by doing

Put a check mark (✓) in front of the correct sentence and a check mark (✗) in front of the incorrect sentence.

- 1- Python is a free and open-source language, which does not allow anyone to develop it. ()
- 2- It is not permissible to create applications and websites in Python ()
- 3- Python uses data science and machine learning. ()
- 4- Python is an interpreted language because it translates programming codes line by line. ()
- 5- Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming ()
- 6- Python is one of the most difficult programming languages. ()
- 7- Python can be integrated with other languages such as C, C++, and Java ()
- 8- One of the disadvantages of Python is the lack of libraries that you can use. ()
- 9- NumPy: A library used in data science, statistics, and artificial intelligence ()
- 10- Pandas: A library for analyzing and processing data. ()

Download Python from the official website and arrange the following steps in the correct order.

- 1-You must choose 64bit or 32bit, depending on your device specifications.
- 2-Visit the official Python website www.python.org
- 3-Choose the system you are working on (Windows, Mac, or Linux).
- 4-After downloading, install the program on your device and follow the instructions.
- 5-Choose "Downloads"

Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1- The official website of Python is

A- www.python.org

B- www.python.edu

C- www.pythonlibr.adp

D- www.application.org

2- is a library widely used in data science, statistics, and artificial intelligence.

A- Pandas

B- Matplotlib

C- NumPy

D- Angular

Weekly evaluation: AFor the first test

Put the (✓) correct statement or the (x) incorrect statement.

1- In Python, the NumPy library is used in data science, statistics, and artificial intelligence. ()

2. One of the disadvantages of Python is the limited libraries that you can use. ()

Weekly evaluation: AFor the second test

Put the (✓) correct statement or the (x) incorrect statement.

1 Python can be integrated with other languages such as C, C++, and Java. ()

2. Pandas is a library for data analysis and manipulation in Python. ()

Weekly evaluation: AFor the third test

Put the (✓) correct statement or the (x) incorrect statement.

1 When installing Python, you need to choose between 64bit or 32bit, based on your device specifications. ()

2. Matplotlib: is a library for data analysis and manipulation. ()

Lesson7 Variables in Python

Engage:

What are variables in programming languages? How can they be written and classified?

Learn

Variables in programming languages express a reserved place in memory to store and save a specific value, where the value can change (example: Taher= 20) In this example, we expressed a variable named (Taher) and its value is equal to (20), where you can change the value of the variable while dealing with the program immediately during the execution of the program.

Conditions for naming variables in Python:

- 1.The variable name begins with a letter or an underscore _.
- 2.The change name contains letters (A-Z) or numbers or an underscore _
- 3.Reserved words may not be used in Python because they express specific values that the program understands (example: False) A reserved word within the program is a word that indicates a reserved value (logical value)

Dear student... When writing a variable name, you must take into account placing the variable names in upper and lowercase letters (example: TAHER, Taher, taher, TaheR) In the previous example, the variable names refer to four variables and not one variable.

Types of variables in Python

1-Numbers: Used to store numerical values such as integers (int) and decimals (float).

Integer variables:

X= 5

Y= 10

Decimal variables:

Z= 5.25

A= 8.32

2-Strings: Used to store texts such as names and addresses.

Texts are placed between single quotes ' ' or double quotes " "

Name = "Taher"

City = 'Cairo'

3-Booleans: A data type that contains only two values True or False

Often used in comparisons and decision making in codes

Is_taher_student = False

Is_taher_a_teacher = True

Python program interface

1-Through the interactive Python interface (Python Shell):

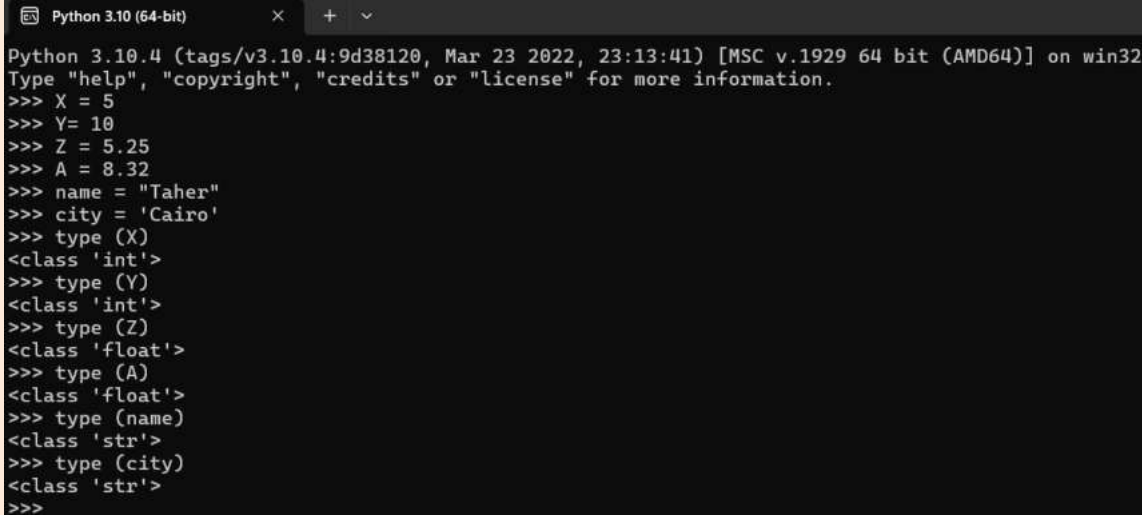
You can write simple codes and execute them directly to see the results.

```
Python 3.10 (64-bit)
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello World")
Hello World
>>>
```

2-Text editor: It allows you to write longer and more complex codes and save them to run later.

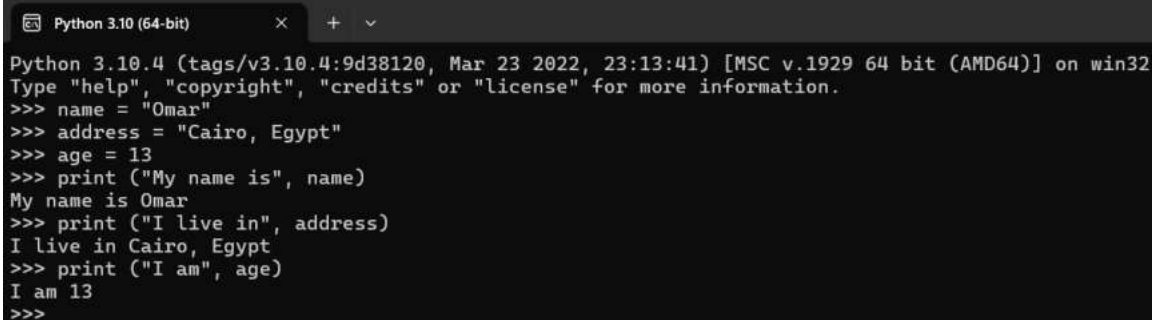
The interactive Python interface is installed when you install the Python language, and there is no need to download it, unlike a text editor that must be downloaded from the Internet, such as Visual Studio and PyCharm

To know the type of the variable you can use the type () function



```
Python 3.10 (64-bit)
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> X = 5
>>> Y = 10
>>> Z = 5.25
>>> A = 8.32
>>> name = "Taher"
>>> city = 'Cairo'
>>> type(X)
<class 'int'>
>>> type(Y)
<class 'int'>
>>> type(Z)
<class 'float'>
>>> type(A)
<class 'float'>
>>> type(name)
<class 'str'>
>>> type(city)
<class 'str'>
>>>
```

Simple Python Code Using Variables



```
Python 3.10 (64-bit)
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> name = "Omar"
>>> address = "Cairo, Egypt"
>>> age = 13
>>> print("My name is", name)
My name is Omar
>>> print("I live in", address)
I live in Cairo, Egypt
>>> print("I am", age)
I am 13
>>>
```

The print function () in Python is one of the most commonly used functions, used to display text or values on the output screen. It can be used to display text, variables, or even the results of mathematical operations

Learn by doing

Put a check mark (✓) in front of the correct sentence and a check mark (✗) in front of the incorrect sentence.

- 1- Variables in programming languages are a reserved place in memory to store and save a specific value. ()
- 2- The variable name must not begin with a letter or an underscore sign _ ()
- 3- TAHER, Taher, taher, TaheR are 4 names for variables in the Python language. ()
- 4- The change name contains letters (A-Z) or numbers or an underscore sign _ ()
- 5- When naming variables, reserved words in the Python language may be used. ()
- 6- Y= 10 The statement type of the variable Y is numeric for an integer ()
- 7- City = "Cairo" The statement type of the variable City is text ()
- 8- Is_taher_student = False The statement type of the variable Is_taher_student is logical. ()
- 9- To know the type of the variable, we do not need to use the type () function. ()
- 10- The texts of variables are placed between single quotation marks ' ' or double quotation marks " " ()

Choose the correct answer from the following.

1.The function is used to display texts or values on the output screen

- A.Cos() B.Type().
C.Print(). D.Sin().

2.The text value of the variable is placed between the signs

- A."" B.<>.
C.>=. D.=<.

3.To display texts, variables, or even the results of mathematical operations, we use the function

- A.Cos() B.Type().
C.Print(). D.Sin().

4.To know the type of the variable statement, we use the function

- A.Cos() B.Type().
C.Print(). D.Sin().

Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1- The function is used to display text or values on the output screen.

a- Cos() **b- Type()** **c- Print()** **d- Sin()**

2- To determine the data type of a variable, we use the function

a- Pandas **b- Matplotlib** **c- NumPy** **d- Type()**

Weekly evaluation: AFor the first test

Put the (✓) correct statement or the (x) incorrect statement.

1 In Python, when naming variables, reserved words can be used. ()

2. To determine the type of a variable, we do not need to use the **type()** function. ()

Weekly evaluation: AFor the second test

Put the (✓) correct statement or the (x) incorrect statement.

1 A variable name cannot start with a letter or (_) character. ()

2. Y = 10, the data type of variable Y is an integer. ()

Weekly evaluation: AFor the third test

Put the (✓) correct statement or the (x) incorrect statement.

1- Text value for variables are placed between single quotes ' ' or double quotes " ". ()

2. City = "Cairo", the data type of the variable City is a string. ()

Class evaluation

Homework:

Choose the appropriate answer to complete the following statements:

1- To display text, variables, or even the results of arithmetic operations, we use the function

.....
A- Cos() B- Type() C- Print() D- Sin()

2 -The string value of a variable is placed between the marks

A- "" B- < > B- >= D- <=

Weekly evaluation: AFor the first test

Put the (√) correct statement or the (x) incorrect statement.

- 1 The variable name can contain letters (A-Z), numbers, or the underscore _ . ()
2. (Is_taher_student = False), the data type of the variable (Is_taher_student) is Boolean. ()

Weekly evaluation: AFor the second test

Put the (√) correct statement or the (x) incorrect statement.

- 1 Variables in programming languages are reserved places in memory to store and hold a specific value. ()
2. TAHER, Taher, taher, TaheR are 4 variables names for variables in Python. ()

Weekly evaluation: AFor the third test

Put the (√) correct statement or the (x) incorrect statement.

- 1 The text editor allows you to write longer and more complex codes and save them to run later. ()
2. To determine the type of a variable, you can use the **Len()** function. ()

حمل الآن

مجاناً وحصرياً

المراجعة رقم (4)

اختبار شهر ابريل

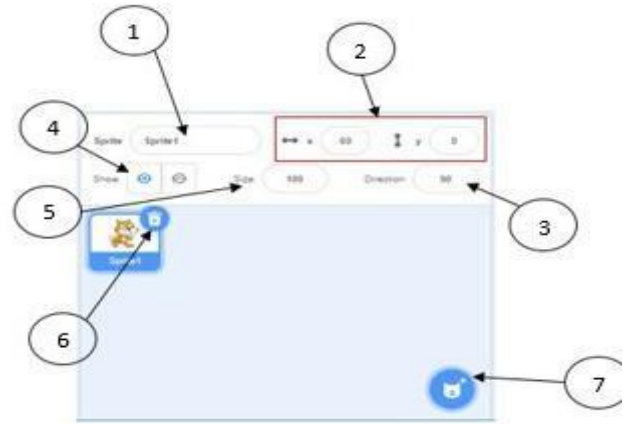


Lesson 5 Sprite area in Scratch



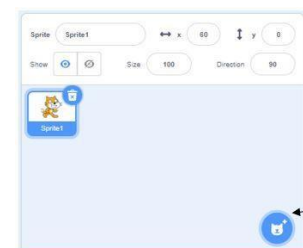
➤➤➤ **Sprites area** (contains the sprites used in the project)

- 1- The name of the sprite (you can modify it by clicking on it and renaming it).
- 2- The location of the sprite and determines it (the horizontal axis is the X values and the vertical axis is the Y values, note the current location of the sprite (cat) on the platform is ((60,0))
- 3- The direction of the sprite's movement: (You can change the direction by **changing the Direction value**).
- 4- Show or hide the sprite on the platform.
- 5- The size of the sprite and its value can be changed.
- 6- Delete the sprite from the platform.
- 7- Add a new sprite Choose Sprite.



➤➤➤ **Add a new sprite:**

- Click on -Choose Sprite



-Choose Basketball



- Remove the cat object from the stage



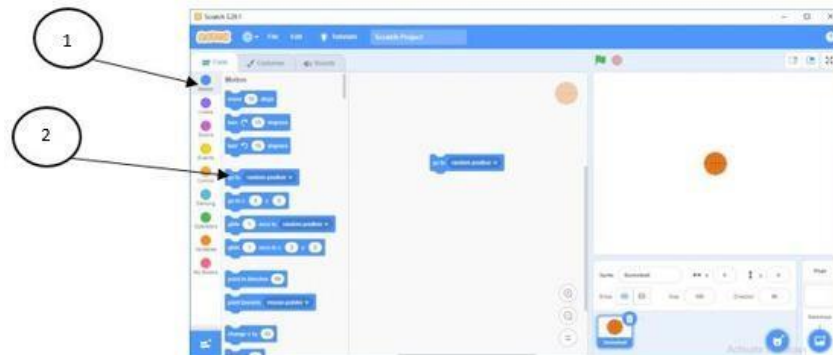
Project 2:

Required to move the ball randomly on the platform while making a sound for the ball and repeating this 10 times

Project creation steps:

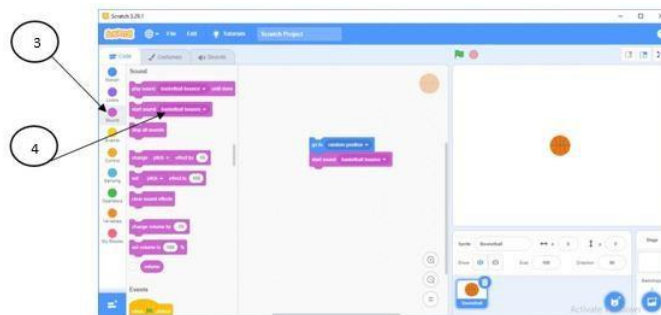
1-From Motion

2-Choose the Go to random position command



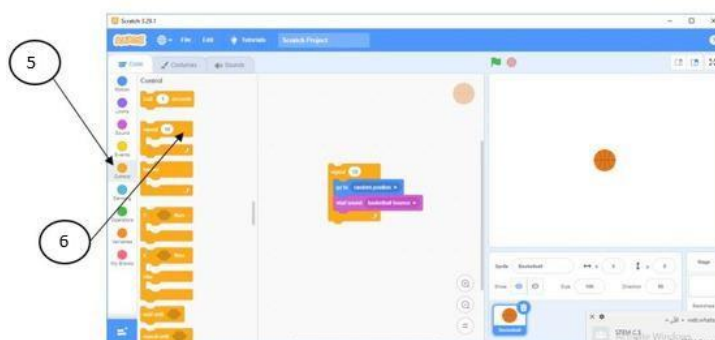
3-From Sound

4-Choose the command Play sound



5-To repeat the movement 10 times from Control

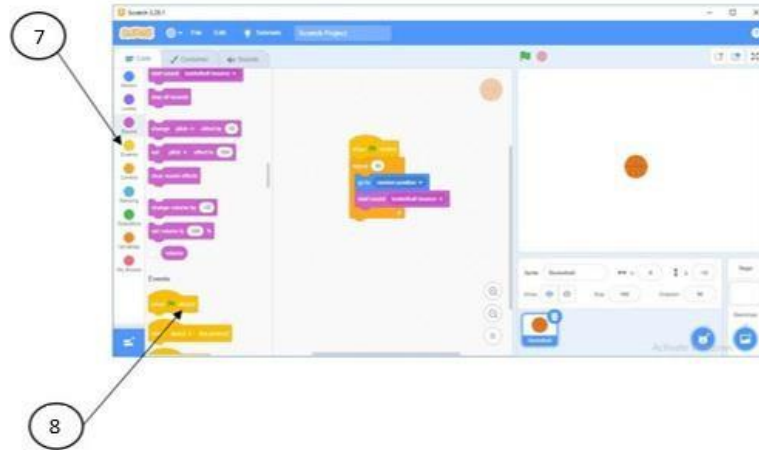
6-Choose the Repeat command.



7-From Events

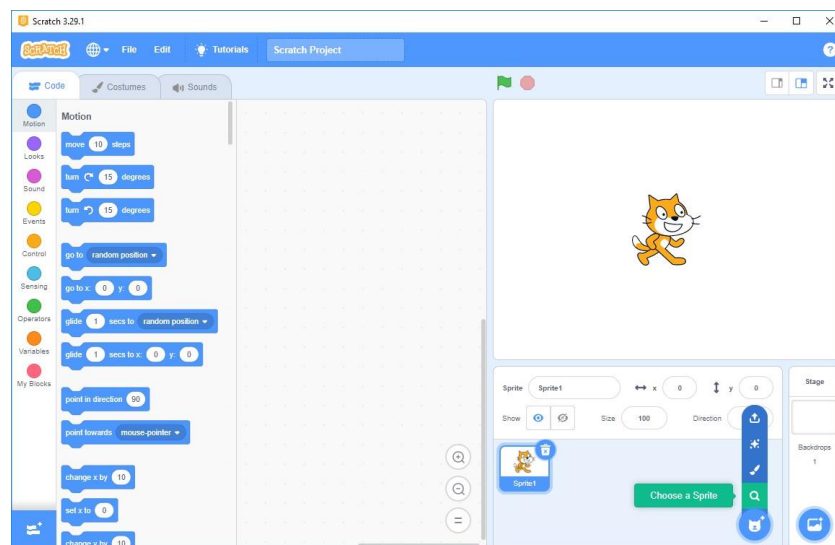
8-Choose the "When Clicked command"

9- Test the execution of the project

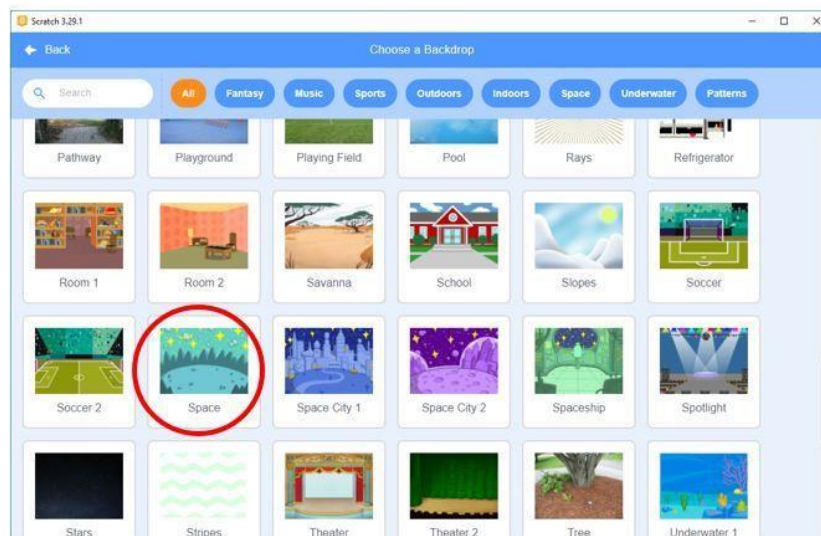


Project (3) Spaceship

-Insert a new sprite Rocketship



-Insert a new background by clicking on Choose a Backdrop, browse through the different backgrounds and then choose "Space".



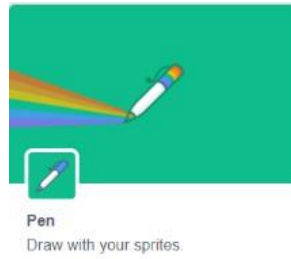
Square Drawing Project:

Square Drawing Project:

1. **Open a new project:** Open Scratch and start a new project.
2. **Select the pen:** We will use the "pen" to draw our picture. In the code area, find the "pen" section and drag the "pen" block down. This block will make the pen start drawing

note:

By clicking on Add Extension the pen blocks will appear as shown in the figure.



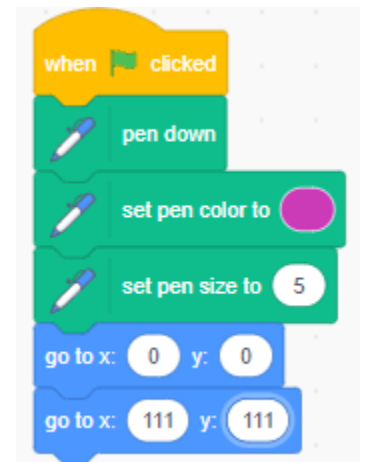
Blocks will appear as shown in the opposite figure:

3. **Setting Color and Size:** Before you start drawing, you can set the line color and size using the blocks in the "Pen" section. For example, you can use the "Set Pen Color to" block to choose a specific color, and the "Set Pen Size to" block to set the line thickness.
4. **Moving the Pen:** Now, we will move the pen to draw the shape we want. Use the "Go to x:y:" block to set the starting point, and then use the "Go to x:y:" block again to set the ending point. This will make the pen draw a straight line between the two points.

5. **Repeating Steps:** Repeat the previous steps to draw more lines and form the shape you want.

Notes:

- **Drawing different shapes:** You can draw any geometric shape by setting the start and end points of the lines appropriately.
- **Adding details:** You can add details to your images such as eyes, mouth, and ears.



Project: Drawing a circle

To draw a circle, you can use the "Repeat" block to repeat the process of drawing short lines at different angles, this helps with the circle drawing effect.

Questions and exercises



()

()

Put ✓ or X:-

1. The sprites used in the project appear in the Sprites area. ()
2. The sprite name can be modified only once. ()
3. The location of the sprite on the platform is determined by the value of the horizontal axis X only. ()
4. The horizontal and vertical axis are used to know the current location of the sprite on the platform. ()
5. To modify the name of the sprite, click on its current name and rename it. ()
6. The direction of the sprite's movement can be changed by clicking on the word Direction. ()
7. The sprite can be shown or hidden on the platform by clicking on Choose Sprite. ()
8. The size of the sprite is changed by its value in the Sprites area. ()
9. The sprite can be deleted from the platform. ()
10. Only one sprite can be added to the platform. ()
11. To add a new sprite, click on Choose Sprite. ()
12. The Stop command is used to watch the project execution. ()
13. A new background is inserted for the project through the programming area. ()
14. The Start command is used to stop the project. ()
15. We use the coordinates (x, y) to locate the point on the stage ()



Lesson Six: Principles of Python



Python language definition:-

The first version of the language was in 1991 .

It is a programming language it is widely used in:-

- Data Science
- In machine learning,
- For website and application development

Features of Python language:

1- Open source: Python is free and open source, allowing everyone to use and develop it.

2. Interpreted language: Which means that it **translates programming codes** line by line, so if there are errors in the program code, it will stop working, as programmers can quickly find errors in the codes.

3. Versatility: It can be used in developing web applications, data science, artificial intelligence, machine learning, and game programming.

4. Easy-to-use language: It is one of the easiest programming languages for beginners because of its simple and organized formula and uses words similar to English, unlike other programming languages.

5. Integration: Python can be integrated with other languages such as C, C++, and Java, and it can also be used in developing multi-platform programs.

6. Libraries: Python has many libraries that you can use.

Python Libraries

They are pre-built codes and functions that help programmers perform specific tasks without having to write codes from scratch, libraries are a powerful tool that increases the efficiency and effectiveness of programming using Python, as they provide ready-made solutions to many common problems or requirements.

like:

NumPy: is a library widely used in data science, statistics, and artificial intelligence.

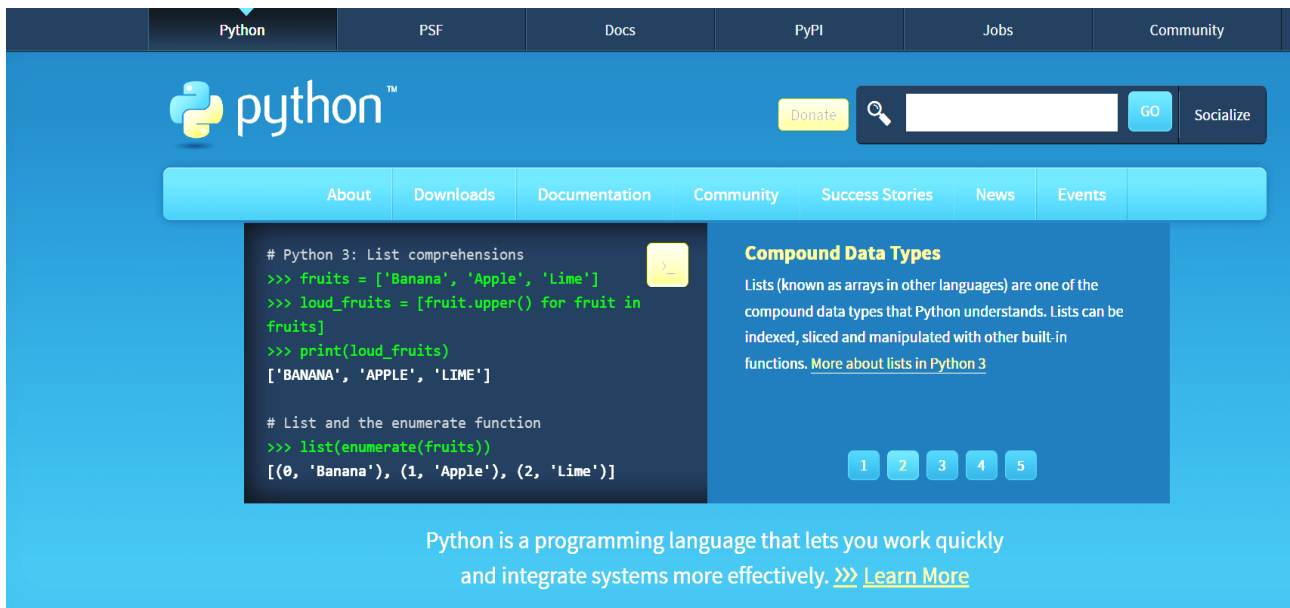
Pandas: is a library for analyzing and processing data.

Matplotlib: is a library for creating graphs and charts

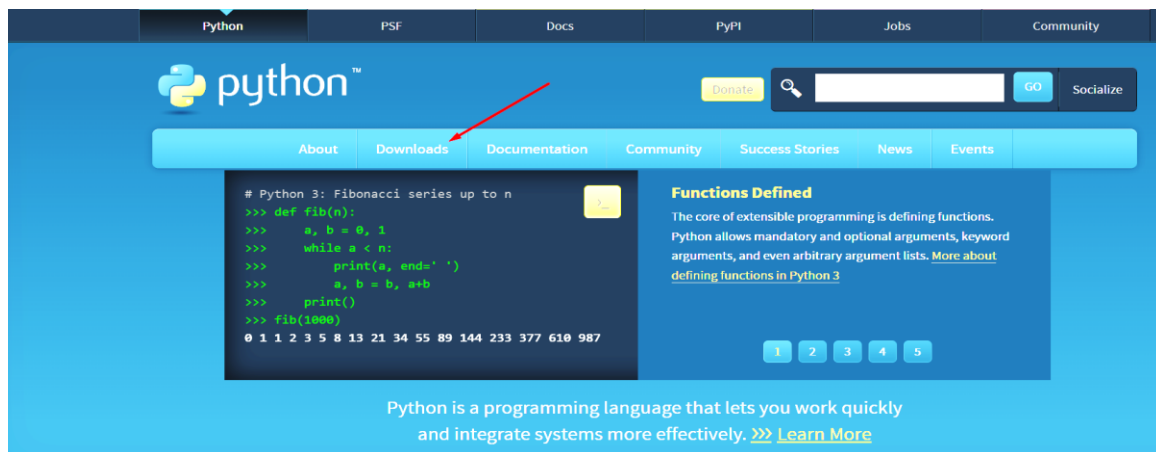
How to download the program from the official website:



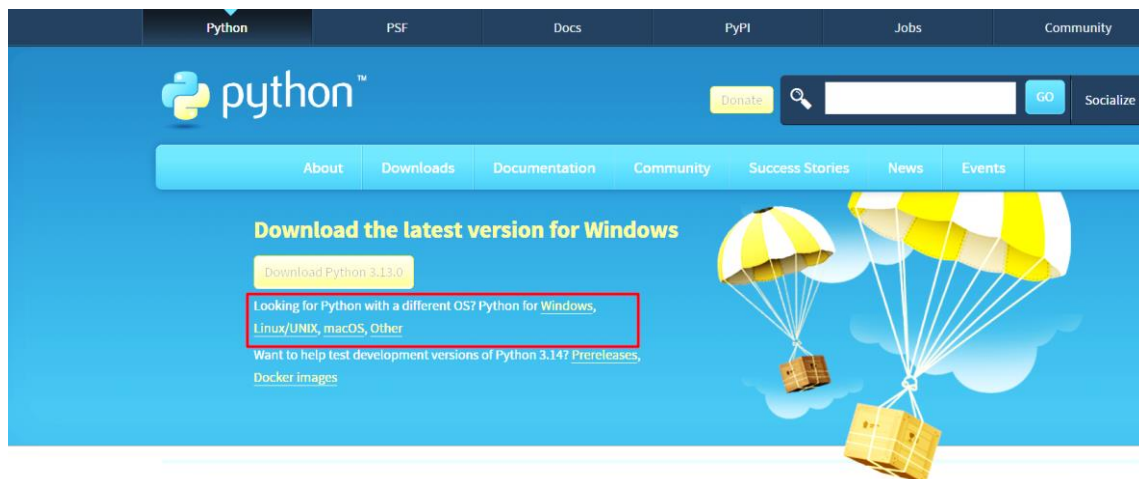
1. Visit the official Python website www.python.org



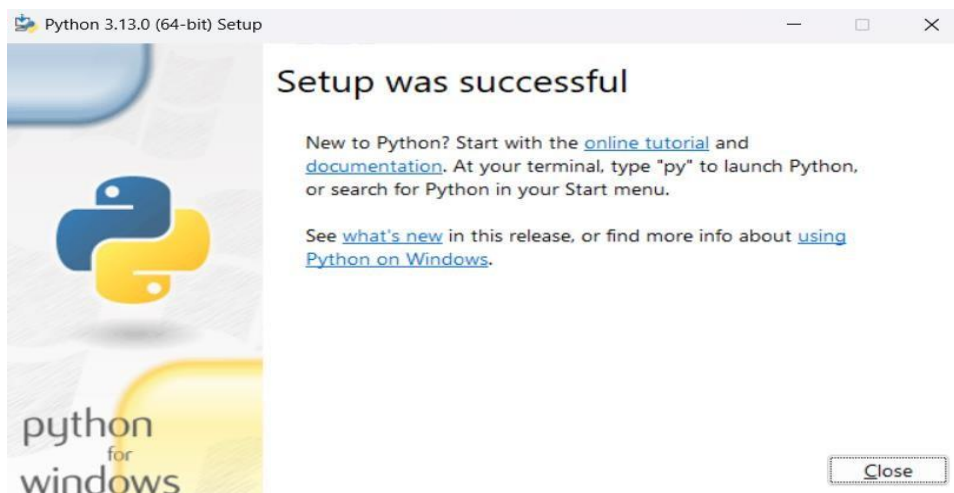
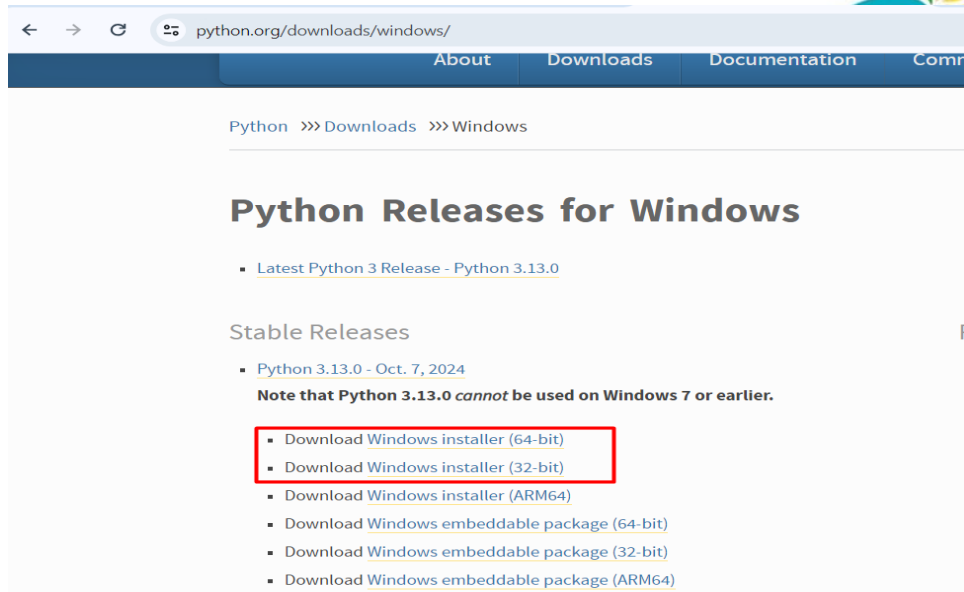
2. Select "Downloads"



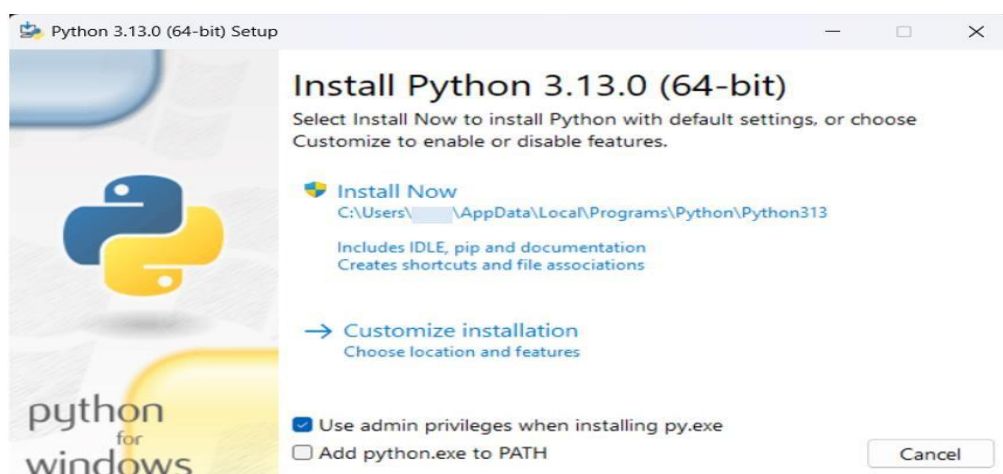
3. Then choose the system you are working on (Windows, Mac, or Linux).



4- You must choose 64 bit or 32 bit, according to your device specifications.



5-After downloading, install the program on your device and follow the instructions



Questions and exercises



Put ✓ or X:-

1. Python is a free and open-source language, which does not allow anyone to develop it. ()
2. It is not permissible to create applications and websites in Python. ()
3. Python uses data science and machine learning. ()
4. Python is an interpreted language because it translates programming codes line by line. ()
5. Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming. ()
6. Python is one of the most difficult programming languages. ()
7. Python can be integrated with other languages such as C, C++, and Java. ()
8. One of the disadvantages of Python is the lack of libraries that you can use. ()
9. NumPy: A library used in data science, statistics, and artificial intelligence. ()
10. Pandas: A library for analyzing and processing data. ()

Download Python from the official website and arrange the following steps in the correct order.

- 1- You must choose 64bit or 32bit, depending on your device specifications.
- 2- Visit the official Python website www.python.org
- 3- Choose the system you are working on (Windows, Mac, or Linux).
- 4- After downloading, install the program on your device and follow the instructions.
- 5- Choose "Downloads"

Lesson 7: Variables in Python



Definition of variables–: Variables in programming languages express a reserved place in memory to store and save a specific value, where the value can change (example: `Taher= 20`) In this example, we expressed a variable named (`Taher`) and its value is equal to (`20`), where you can change the value of the variable while dealing with the program immediately during the execution of the program

Conditions for naming variables in Python:

1. The variable name begins with a letter or an underscore _.
2. The change name contains letters (A–Z) or numbers or an underscore _
3. Reserved words may not be used in Python because they express specific values that the program understands (example: `False`) A reserved word within the program is a word that indicates a reserved value (logical value)

Note When writing a variable name, you must take into account placing the variable names in upper and lowercase letters (example: `TAHER`, `Taher`, `taher`, `TaheR`) In the previous example, the variable names refer to four variables and not one variable.

Types of variables in Python

1- Numbers: Used to store numerical values such as integers (`int`) and decimals (`float`).

Integer variables:

`X=5`

`- Y=10`

Decimal variables:

`Z=`

`5.25`

`A=`

`8.32`

2- Strings: Used to store texts such as names and addresses.

Texts are placed between single quotes ' ' or double quotes " "

`Name="Taher"`

`City='Cairo'`

3- Booleans: A data type that contains only two values `True` or `False`

Often used in comparisons and decision making in codes

`Is_taher_student=False`

`Is_taher_a_teacher=True`

Python program interface

- 1- Through the interactive Python Shell interface, you can write **simple** codes and execute them directly to see the results.
- 2- The Text Editor allows you to write longer, more complex codes and save them for later execution

Print function() In Python it is one of the most used functions, as it is used to display text or values on the output screen and can be used to display text, variables, or even the results of mathematical operations

Questions and exercises



Put ✓ or X:-

1. Variables in programming languages are a reserved place in memory to store and save a specific value. ()
2. The variable name must not begin with a letter or an underscore sign `_`. ()
3. TAHER, Taher, tahir, TaheR are 4 names for variables in the Python language. ()
4. The change name contains letters (A-Z) or numbers or an underscore sign ()
5. When naming variables, reserved words in the Python language may be used ()
6. `Y= 10` The statement type of the variable Y is numeric for an integer. ()
7. `City = "Cairo"` The statement type of the variable City is text. ()
8. `Is_taher_student = False` The statement type of the variable Is_taher_student is logical. ()
9. To know the type of the variable, we do not need to use the type function. ()
10. The texts of variables are placed between single quotation marks or double quotation marks. ()

Choose the correct answer

1. The function ... is used to display texts or values on the output screen
 - A. `Cos( )`
 - B. `Type( )`.
 - C. `Print( )`.
 - D. `Sn( )`.
2. value of the variable is placed between the signs
 - A. `'''`
 - B. `<>`.
 - C. `>=`.
 - D. `=<`.
3. To display texts, variables, or even the results of mathematical operations, we use the function
 - A. `Cos( )`
 - B. `Type( )`.
 - C. `Print( )`.
 - D. `Sin( )`.
4. To know the type of the variable statement, we use the function
 - A. `Cos( )`
 - B. `Type( )`.
 - B. `Print( )`.
 - D. `Sin( )`



Answer Key of the Textbook

Lesson5

-:Put or X			
1	✓	9	✓
2	X	10	X
3	X	11	✓
4	✓	12	X
5	✓	13	X
6	✓	14	X
7	X	15	✓
8	✓		

Lesson6

-: Put or X-1				Download Python from the official website and arrange the following steps in the correct order
1	X	6	X	1- Visit the official Python website www.python.org
2	X	7	✓	2- Select "Downloads"
3	✓	8	X	Then choose the system you are working on (Windows, Mac, or Linux)
4	✓	9	✓	4- You must choose 64 bit or 32 bit, according to your device specifications.
5	✓	10	✓	5-After downloading, install the program on your device and follow the instructions

Lesson7

A-:Put or X		B-Choose the correct answer	
1	✓	1	Print()
2	X	2	" "
3	✓	3	Print()
4	✓	4	type()
5	X		
6	✓		
7	✓		
8	✓		
9	X		
10	X		

حمل الآن

مجاناً وحصرياً

المراجعة رقم (5)

اختبار شهر ابريل



Exercises



Put (✓) or (X)

1. In the Scratch program, a student needs to write a lot of complex code () .
2. Scratch is considered a difficult educational tool to use () .
3. In Scratch, the Stage area displays the programming sections () .
4. Scratch is a paid program () .
5. Scratch uses a visual interface based on a set of blocks () .
6. Scratch helps students learn the basic of programming () .
7. Scratch provides a very wide range of ideas that can be programmed () .
8. In Scratch, students have difficulty sharing projects with others () .
9. In Scratch, the results of the work or project appear in the Blocks Area () .
10. To execute the project, click the  icon ()
11. Interactive AI games can be created using Scratch () .
12. The Scratch interface cannot be changed to Arabic () .
13. The wait command can be used to control the speed of Sprite 's movement () .
14. Sprites used in the project appear in the Sprites area () .
15. Sprite 's location on the platform is determined by the value of the horizontal axis X only .()
16. Before executing any project the coordinates of the object on the stage are X=10 and Y=10 . ()
17. To modify the name of the Sprite , click on its current name and rename it() .
18. The direction of the Sprite 's movement can be changed by clicking on the word " Direction" .()
19. The Sprite can be shown or hidden on the platform by clicking on Choose Sprite .()
20. We use click , drag-and-drop to interact with any command inside the code section.
21. A script is a set of commands arranged in a specific order () .
22. The size of the sprite is changed by its value in the Sprites area () .

- 23** .The Sprite can be removed from the platform () .
- 24** .Only one Sprite can be added to the platform () .
- 25** .To add a new Sprite, click Choose Sprite () .
- 26** .The Stop command is used to watch the project execution () .
- 27** .A new background is added to the project through the script area() .
- 28** .The Start command is used to stop project () .
- 29** .We use the (X,Y) coordinates to determine the position of the Sprite on the stage .
- 30** .In Scratch, an object's name can be modified more than once () .
- 31** To make the movement continuous you can install the command several times.()
- 32** .Python is considered one of the most difficult programming languages () .
- 33** .The " pen down" block makes the pen start drawing any geometric shapes () .
- 34** .Python is considered an interpreted language because it translates code line by line () .
- 35** .It is not possible to create applications and websites in Python () .
- 36** .Python is a free and open-source language, which does not allow anyone to develop it() .
- 37** .Python is used in web application development, data science, artificial intelligence, machine learning, and game programming() .
- 38** .Python can be integrated with other languages such as C++, C, and Java because it is an integration language. ()
- 39** .The NumPy library is used in data science, statistics, and artificial intelligence() .
- 40** .Pandas is a library used for data analysis and processing () .
- 41** .Python is downloaded based on your device specifications, choosing between 64-bit and 32-bit() .
- 42** .Python is one of the easiest programming languages for beginners and can be downloaded from the official website www.python.org () .
- 43** .A program written in Python executes without interruption, even in the event of a programming error() .
- 44** .Python runs on various operating systems, such as Windows and Linux() .

- 45** .The Python programming language is easy because of using words similar to English. ()
- 46** . Variables in programming languages are reserved places in memory to store and save a specific value. ()
- 47** .A variable name cannot start with a letter or an (_) character. ()
- 48** .AMIRA, AMiRa, amira, Amira are 4 names for variables in Python () .
- 49** .The variable name can contain letters (A-Z), numbers, or the underscore .(_)
- 50** .When naming variables, you can use Python reserved words () .
- 51** - Y=25.3 , the type of the variable Y, is integer() .
- 52** .City = "Cairo" the type of the variable City is string.()
- 53** .To determine the type of a variable, we do not need to use the type () function () .
- 54** .The text Variables are placed between single or double quotes () .
- 55** The value of a Boolean variable can be False or True () .
- 56** .Strings variables are used to store names and addresses () .
- 57** .X=2.5 is a numeric variable whose value is a float () .
- 58** .Through the Python interactive interface, you can write long and complex code, save it, and run it later () .
- 59** .The Print () function is used to display text, variables or even the results of calculations () .
- 60** .Matplotlib is a Python library used to create graphs and charts () .
- 61** .The first version of Python was released in 1991. ()
- 62** .The Python Shell in Python is used to write and execute simple codes directly.()
- 63** .The Text Editor in Python is used to write longer and more complex codes.()
- 65** .To determine the type of a variable you can use the Len() function.()

Choose the correct answer from the following options:

1. To execute the project, click on the icon.

- A-  B-  C-  D- 

2 .In Scratch, the result of the project appears on the area

- A- Script Area B- Stage C- Area Blocks D- Sprites

3 .In Scratch, to repeat the movement of a sprite, we use thecommand

- A- Start B- Choose Sprite C- Repeat D- Stop

4 .In Scratch, to add sound effects to a sprite, we use the command

- A- Repeat B- Play Sound C- Looks D- Choose a Backdrop

5. One of the advantages of the Python language is that it is.....

- A- Open Source B- Closed Source C- Not Free D- Limited Use

6. Python translates programming code line by line, which means it is

- A. Complex language B. Interpreted language
C. Closed-source D. incomplete.

7. The Scratch program file has the extension.....

- A. Svb B. Sb3 C. Doc D. Xls

8 .Sprite movement commands are found in the command.

- A. Motion B. Events C. Looks D. Control

9 .To save a project in Scratch, select Save to your computer from the menu

- A. Home B. View C. Tool D. File

10 is a data analysis library in Python.

- A-NumPy B-Pandas C-Matplotlib D-Program

11..... is a library used in data science and statistics in Python.

- A. NumPy B. Pandas C. Matplotlib D. Program

12 is a Python library used to create graphs and charts.

- A. NumPy B. Pandas C. Matplotlib D. Program

13 .The function is used to display text or values on the output screen.

A-sos() **B**-type() **C**-print() **D**-sin()

14 .To display textual results, strings, or even the results of mathematical operations, we use the function.....

A-sos() **B**-type() **C**-print() **D**-sin()

15 .To determine the type of a variable's statement, we use the function.....

A-sos() **B**-type() **C**-print() **D**-sin()

16 . .In Python the text value of variable is placed between the. marks

A-" " **B**-<> **C**-=< **D**=<-

17 .An example of a reserved word in Python is, which indicates a logical value.

A- Hello **B**-Hi **C**-Rakan **D**-False

18 .The variable is used for comparisons and decision-making in Python code.

A. String **B**. Object **C**. Boolean **D**. Number

19 allows you to write simple code and run it directly to see the results.

A. Python Shell **B**. Editor **C**. Website **D**. Program

20 allows you to write long and complex code and save it for later execution.

A. Python Shell **B**. Text Editor **C**. Website **D**. Program

21 .The Wait value in Scratch represents to.....

A. 1 minute **B**. 1 second **C**. 30 minutes **D**. 30 seconds

22. The pen extension is added by clicking on

a. Add extension **b**. choose sprites
c. stage area **d**. change backdrop

23. To execute the project in Scratch , use the command



24. The official website of Python is

A. www.Python.org

b. www.Python.edu

C. www.Python.edu

d. www.application.org

25. The Python Shell is when Python is installed.

a. downloaded separately

b. numbers

C. installed automatically

d. letters

26. PyCharm must be

a. downloaded

b. ignored

c. deleted

d. all of them

27. The variable names "amira", "Amira" refer to the variables.

a. same

b. different

c. Boolean

d. decimal

28. Python can be integrated with

a. C++

b. C

C. Java

d. all of them

29. The Scratch program helps the student to

a. remote controls

b. 3d model scanning

C. learn the principles of programming

d. limited use

30. To add a new object in Scratch press on

a. start

b. stop

c. blocks

d. choose sprite

31. The Scratch program uses a simple visual interface based on

a. events

b. blocks

c. move

d. start

32. To make the ball move randomly use the command.

a. move 30 steps

b. repeat 40

c. go to random position

d. say hi

Exercises



Put (✓) or (X)

1. In the Scratch program, a student needs to write a lot of complex code (X) .
- 2 .Scratch is considered a difficult educational tool to use (X) .
- 3 .In Scratch, the Stage area displays the programming sections (X) .
- 4 .Scratch is a paid program (X) .
- 5 .Scratch uses a visual interface based on a set of blocks (✓) .
- 6 .Scratch helps students learn the basic of programming (✓) .
- 7 .Scratch provides a very wide range of ideas that can be programmed (✓) .
- 8 .In Scratch, students have difficulty sharing projects with others (X) .
- 9 .In Scratch, the results of the work or project appear in the Blocks Area (X) .
10. To execute the project, click the  icon (✓)
11. Interactive AI games can be created using Scratch (✓) .
- 12 .The Scratch interface cannot be changed to Arabic (X) .
- 13 .The wait command can be used to control the speed of Sprite 's movement (✓) .
- 14 .Sprites used in the project appear in the Sprites area (✓) .
- 15 .Sprite 's location on the platform is determined by the value of the horizontal axis X only .(X)
- 16 .Before executing any project the coordinates of the object on the stage are X=10 and Y=10 . (X)
- 17 .To modify the name of the Sprite , click on its current name and rename it(✓) .
- 18 .The direction of the Sprite 's movement can be changed by clicking on the word " Direction" .(✓)
- 19 . The Sprite can be shown or hidden on the platform by clicking on Choose Sprite X .
- 20 .We use click , drag-and-drop to interact with any command inside the code section. (✓)

- 21 .A script is a set of commands arranged in a specific order (✓) .
- 22 . The size of the sprite is changed by its value in the Sprites area (✓) .
- 23 .The Sprite can be removed from the platform (✓) .
- 24 .Only one Sprite can be added to the platform (X) .
- 25 .To add a new Sprite, click Choose Sprite (✓) .
- 26 .The Stop command is used to watch the project execution (X) .
- 27 .A new background is added to the project through the script area(X) .
- 28 .The Start command is used to stop project (X) .
- 29 .We use the (X,Y) coordinates to determine the position of the Sprite on the stage ✓
- 30 .In Scratch, an object's name can be modified more than once (✓) .
- 31 .To make the movement continuous you can install the command several times. ✓
- 32 .Python is considered one of the most difficult programming languages (X) .
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- 36 .Python is a free and open-source language, which does not allow anyone to develop it(X) .
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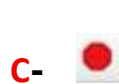
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- 59 .The Print () function is used to display text, variables or even the results of calculations (✓) .
- 60 .Matplotlib is a Python library used to create graphs and charts (✓) .
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62. The Python Shell in Python is used to write and execute simple codes directly.(✓)

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Choose the correct answer from the following options:

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a. same

b. different

c. Boolean

d. decimal

28. Python can be integrated with

a. C++

b. C

C. Java

d. all of them

29. The Scratch program helps the student to

a. remote controls

b. 3d model scanning

C. learn the principles of programming

d. limited use

30. To add a new object in Scratch press on

a. start

b. stop

c. blocks

d. choose sprite

31. The Scratch program uses a simple visual interface based on

a. events

b. blocks

c. move

d. start

32. To make the ball move randomly use the command.

a. move 30 steps

b. repeat 40

c. go to random position

d. say hi

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

